SEQUENCE LISTING

<110> Swedish Orphan Biovitrum

<120> Modified sulfamidase and production thereof

<130> 21068924

<160> 3

<170> PatentIn version 3.5

<210> 1
<211> 482
<212> PRT
<213> Homo sapiens

<400> 1

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Arg Pro Arg Asn Ala Leu Leu Leu Leu Ala Asp Asp Gly Gly Phe Glu
1               5                  10                  15

Ser Gly Ala Tyr Asn Asn Ser Ala Ile Ala Thr Pro His Leu Asp Ala
            20                  25                  30

Leu Ala Arg Arg Ser Leu Leu Phe Arg Asn Ala Phe Thr Ser Val Ser
        35                  40                  45

Ser Cys Ser Pro Ser Arg Ala Ser Leu Leu Thr Gly Leu Pro Gln His
    50                  55                  60

Gln Asn Gly Met Tyr Gly Leu His Gln Asp Val His His Phe Asn Ser
65                  70                  75                  80

Phe Asp Lys Val Arg Ser Leu Pro Leu Leu Leu Ser Gln Ala Gly Val
                85                  90                  95

Arg Thr Gly Ile Ile Gly Lys Lys His Val Gly Pro Glu Thr Val Tyr
            100                 105                 110

Pro Phe Asp Phe Ala Tyr Thr Glu Glu Asn Gly Ser Val Leu Gln Val
        115                 120                 125

Gly Arg Asn Ile Thr Arg Ile Lys Leu Leu Val Arg Lys Phe Leu Gln
    130                 135                 140

Thr Gln Asp Asp Arg Pro Phe Phe Leu Tyr Val Ala Phe His Asp Pro
145                 150                 155                 160

His Arg Cys Gly His Ser Gln Pro Gln Tyr Gly Thr Phe Cys Glu Lys
                165                 170                 175

Phe Gly Asn Gly Glu Ser Gly Met Gly Arg Ile Pro Asp Trp Thr Pro
            180                 185                 190

Gln Ala Tyr Asp Pro Leu Asp Val Leu Val Pro Tyr Phe Val Pro Asn
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195 200 205

Thr Pro Ala Ala Arg Ala Asp Leu Ala Ala Gln Tyr Thr Thr Val Gly
210 215 220

Arg Met Asp Gln Gly Val Gly Leu Val Leu Gln Glu Leu Arg Asp Ala
225 230 235 240

Gly Val Leu Asn Asp Thr Leu Val Ile Phe Thr Ser Asp Asn Gly Ile
245 250 255

Pro Phe Pro Ser Gly Arg Thr Asn Leu Tyr Trp Pro Gly Thr Ala Glu
260 265 270

Pro Leu Leu Val Ser Ser Pro Glu His Pro Lys Arg Trp Gly Gln Val
275 280 285

Ser Glu Ala Tyr Val Ser Leu Leu Asp Leu Thr Pro Thr Ile Leu Asp
290 295 300

Trp Phe Ser Ile Pro Tyr Pro Ser Tyr Ala Ile Phe Gly Ser Lys Thr
305 310 315 320

Ile His Leu Thr Gly Arg Ser Leu Leu Pro Ala Leu Glu Ala Glu Pro
325 330 335

Leu Trp Ala Thr Val Phe Gly Ser Gln Ser His His Glu Val Thr Met
340 345 350

Ser Tyr Pro Met Arg Ser Val Gln His Arg His Phe Arg Leu Val His
355 360 365

Asn Leu Asn Phe Lys Met Pro Phe Pro Ile Asp Gln Asp Phe Tyr Val
370 375 380

Ser Pro Thr Phe Gln Asp Leu Leu Asn Arg Thr Thr Ala Gly Gln Pro
385 390 395 400

Thr Gly Trp Tyr Lys Asp Leu Arg His Tyr Tyr Tyr Arg Ala Arg Trp
405 410 415

Glu Leu Tyr Asp Arg Ser Arg Asp Pro His Glu Thr Gln Asn Leu Ala
420 425 430

Thr Asp Pro Arg Phe Ala Gln Leu Leu Glu Met Leu Arg Asp Gln Leu
435 440 445

Ala Lys Trp Gln Trp Glu Thr His Asp Pro Trp Val Cys Ala Pro Asp
450 455 460

Gly Val Leu Glu Glu Lys Leu Ser Pro Gln Cys Gln Pro Leu His Asn

465 470 475 480

Glu Leu

<210> 2
<211> 484
<212> PRT
<213> Homo sapiens

<400> 2

Gly Ser Arg Pro Arg Asn Ala Leu Leu Leu Leu Ala Asp Asp Gly Gly
1 5 10 15

Phe Glu Ser Gly Ala Tyr Asn Asn Ser Ala Ile Ala Thr Pro His Leu
20 25 30

Asp Ala Leu Ala Arg Arg Ser Leu Leu Phe Arg Asn Ala Phe Thr Ser
35 40 45

Val Ser Ser Cys Ser Pro Ser Arg Ala Ser Leu Leu Thr Gly Leu Pro
50 55 60

Gln His Gln Asn Gly Met Tyr Gly Leu His Gln Asp Val His His Phe
65 70 75 80

Asn Ser Phe Asp Lys Val Arg Ser Leu Pro Leu Leu Leu Ser Gln Ala
85 90 95

Gly Val Arg Thr Gly Ile Ile Gly Lys Lys His Val Gly Pro Glu Thr
100 105 110

Val Tyr Pro Phe Asp Phe Ala Tyr Thr Glu Glu Asn Gly Ser Val Leu
115 120 125

Gln Val Gly Arg Asn Ile Thr Arg Ile Lys Leu Leu Val Arg Lys Phe
130 135 140

Leu Gln Thr Gln Asp Asp Arg Pro Phe Phe Leu Tyr Val Ala Phe His
145 150 155 160

Asp Pro His Arg Cys Gly His Ser Gln Pro Gln Tyr Gly Thr Phe Cys
165 170 175

Glu Lys Phe Gly Asn Gly Glu Ser Gly Met Gly Arg Ile Pro Asp Trp
180 185 190

Thr Pro Gln Ala Tyr Asp Pro Leu Asp Val Leu Val Pro Tyr Phe Val
195 200 205

Pro Asn Thr Pro Ala Ala Arg Ala Asp Leu Ala Ala Gln Tyr Thr Thr
210 215 220

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Val Gly Arg Met Asp Gln Gly Val Gly Leu Val Leu Gln Glu Leu Arg
225                 230                 235                 240

Asp Ala Gly Val Leu Asn Asp Thr Leu Val Ile Phe Thr Ser Asp Asn
                245                 250                 255

Gly Ile Pro Phe Pro Ser Gly Arg Thr Asn Leu Tyr Trp Pro Gly Thr
            260                 265                 270

Ala Glu Pro Leu Leu Val Ser Ser Pro Glu His Pro Lys Arg Trp Gly
        275                 280                 285

Gln Val Ser Glu Ala Tyr Val Ser Leu Leu Asp Leu Thr Pro Thr Ile
    290                 295                 300

Leu Asp Trp Phe Ser Ile Pro Tyr Pro Ser Tyr Ala Ile Phe Gly Ser
305                 310                 315                 320

Lys Thr Ile His Leu Thr Gly Arg Ser Leu Leu Pro Ala Leu Glu Ala
                325                 330                 335

Glu Pro Leu Trp Ala Thr Val Phe Gly Ser Gln Ser His His Glu Val
            340                 345                 350

Thr Met Ser Tyr Pro Met Arg Ser Val Gln His Arg His Phe Arg Leu
        355                 360                 365

Val His Asn Leu Asn Phe Lys Met Pro Phe Pro Ile Asp Gln Asp Phe
    370                 375                 380

Tyr Val Ser Pro Thr Phe Gln Asp Leu Leu Asn Arg Thr Thr Ala Gly
385                 390                 395                 400

Gln Pro Thr Gly Trp Tyr Lys Asp Leu Arg His Tyr Tyr Tyr Arg Ala
                405                 410                 415

Arg Trp Glu Leu Tyr Asp Arg Ser Arg Asp Pro His Glu Thr Gln Asn
            420                 425                 430

Leu Ala Thr Asp Pro Arg Phe Ala Gln Leu Leu Glu Met Leu Arg Asp
        435                 440                 445

Gln Leu Ala Lys Trp Gln Trp Glu Thr His Asp Pro Trp Val Cys Ala
    450                 455                 460

Pro Asp Gly Val Leu Glu Glu Lys Leu Ser Pro Gln Cys Gln Pro Leu
465                 470                 475                 480

His Asn Glu Leu
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<210> 3
<211> 484
<212> PRT
<213> Homo sapiens

<400> 3

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Arg Pro Arg Asn Ala Leu Leu Leu Leu Ala Asp Asp Gly Gly Phe Glu
1               5                  10                  15

Ser Gly Ala Tyr Asn Asn Ser Ala Ile Ala Thr Pro His Leu Asp Ala
            20                  25                  30

Leu Ala Arg Arg Ser Leu Leu Phe Arg Asn Ala Phe Thr Ser Val Ser
        35                  40                  45

Ser Cys Ser Pro Ser Arg Ala Ser Leu Leu Thr Gly Leu Pro Gln His
    50                  55                  60

Gln Asn Gly Met Tyr Gly Leu His Gln Asp Val His His Phe Asn Ser
65                  70                  75                  80

Phe Asp Lys Val Arg Ser Leu Pro Leu Leu Leu Ser Gln Ala Gly Val
                85                  90                  95

Arg Thr Gly Ile Ile Gly Lys Lys His Val Gly Pro Glu Thr Val Tyr
            100                 105                 110

Pro Phe Asp Phe Ala Tyr Thr Glu Glu Asn Gly Ser Val Leu Gln Val
        115                 120                 125

Gly Arg Asn Ile Thr Arg Ile Lys Leu Leu Val Arg Lys Phe Leu Gln
    130                 135                 140

Thr Gln Asp Asp Arg Pro Phe Phe Leu Tyr Val Ala Phe His Asp Pro
145                 150                 155                 160

His Arg Cys Gly His Ser Gln Pro Gln Tyr Gly Thr Phe Cys Glu Lys
                165                 170                 175

Phe Gly Asn Gly Glu Ser Gly Met Gly Arg Ile Pro Asp Trp Thr Pro
            180                 185                 190

Gln Ala Tyr Asp Pro Leu Asp Val Leu Val Pro Tyr Phe Val Pro Asn
        195                 200                 205

Thr Pro Ala Ala Arg Ala Asp Leu Ala Ala Gln Tyr Thr Thr Val Gly
    210                 215                 220

Arg Met Asp Gln Gly Val Gly Leu Val Leu Gln Glu Leu Arg Asp Ala
225                 230                 235                 240
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Gly Val Leu Asn Asp Thr Leu Val Ile Phe Thr Ser Asp Asn Gly Ile
                245                 250                 255

Pro Phe Pro Ser Gly Arg Thr Asn Leu Tyr Trp Pro Gly Thr Ala Glu
            260                 265                 270

Pro Leu Leu Val Ser Ser Pro Glu His Pro Lys Arg Trp Gly Gln Val
        275                 280                 285

Ser Glu Ala Tyr Val Ser Leu Leu Asp Leu Thr Pro Thr Ile Leu Asp
    290                 295                 300

Trp Phe Ser Ile Pro Tyr Pro Ser Tyr Ala Ile Phe Gly Ser Lys Thr
305                 310                 315                 320

Ile His Leu Thr Gly Arg Ser Leu Leu Pro Ala Leu Glu Ala Glu Pro
                325                 330                 335

Leu Trp Ala Thr Val Phe Gly Ser Gln Ser His His Glu Val Thr Met
            340                 345                 350

Ser Tyr Pro Met Arg Ser Val Gln His Arg His Phe Arg Leu Val His
        355                 360                 365

Asn Leu Asn Phe Lys Met Pro Phe Pro Ile Asp Gln Asp Phe Tyr Val
    370                 375                 380

Ser Pro Thr Phe Gln Asp Leu Leu Asn Arg Thr Thr Ala Gly Gln Pro
385                 390                 395                 400

Thr Gly Trp Tyr Lys Asp Leu Arg His Tyr Tyr Tyr Arg Ala Arg Trp
                405                 410                 415

Glu Leu Tyr Asp Arg Ser Arg Asp Pro His Glu Thr Gln Asn Leu Ala
            420                 425                 430

Thr Asp Pro Arg Phe Ala Gln Leu Leu Glu Met Leu Arg Asp Gln Leu
        435                 440                 445

Ala Lys Trp Gln Trp Glu Thr His Asp Pro Trp Val Cys Ala Pro Asp
    450                 455                 460

Gly Val Leu Glu Glu Lys Leu Ser Pro Gln Cys Gln Pro Leu His Asn
465                 470                 475                 480

Glu Leu Gly Ser
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